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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/018,607 | 07/24/2002 | Susan Joy Cooper | JMYT-252US | 5114 |

7590 04/28/2005

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| EXAMINER |
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MERCADO, JULIAN A

| ART UNIT | PAPER NUMBER |
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1745

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/018,607

Applicant(s)

COOPER ET AL.

Examiner

Julian Mercado

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
4a) Of the above claim(s) 14 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 and 15-52 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12-17-01.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claim 14 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 15, 2005.

Claims 1-13 and 15-52 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hausler (U.S. Pat. 3,881,957).

Hausler teaches a gas diffusion substrate for a fuel cell comprising a porous electrode having a catalyst, e.g. platinum or palladium, supported on a support such as alumina, *inter alia*. (col. 1 line 39-44, col. 5 line 61-68, col. 6 line 43-52) Alumina is electrically non-conducting as it is the same material claimed by applicant. The porous structure is formed from a polymer insofar as comprising Teflon. (col. 9 line 51-56, see also col. 2 line 35-48) The porous structure is considered a metal mesh to the extent that a conducting screen may be embedded therein, with the structure specifically disclosed as being metal. (col. 9 line 47-50 and line 57-60) The catalyst

is, at least to some extent, embedded into the refractory oxide as a surface layer. (col. 6 line 52-55, see also col. 1 line 39-43)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 and 15-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilkinson et al. (EP 0 736 921 A1) in view of Hausler (U.S. Pat. 3,881,957).

Wilkinson et al. teaches a gas diffusion substrate for a fuel cell comprising a porous electrode having a catalyst such as platinum. (col. 1 line 39-44, col. 5 line 61-68, col. 6 line 43-52) The fuel cell employs a membrane electrode assembly, i.e. a polymer electrolyte fuel cell, which also incorporates a second gas diffusion substrate.

As to a second gas phase catalyst, the examiner notes applicant's discussion of Wilkinson et al. on page 5 of the specification, which discloses, *inter alia*, that "the use of the additional gas phase catalyst gives improved performance of the electrode over the corresponding electrode without a gas phase catalyst."

Wilkinson et al. does not explicitly teach the alleged inventive feature of a gas diffusion substrate for a fuel cell comprising a porous electrode having a catalyst supported on an electrically non-conductive support. However, as discussed above, Hausler teaches a platinum

catalyst on alumina. It is noted that Hausler's invention is directed towards fuel cells of the solid electrolyte type, such as in Wilkinson et al. (see Hausler, col. 1 line 58 et seq.)

The skilled artisan would find obvious to modify Wilkinson et al.'s invention by employing a catalyst on a non-conductive support. The motivation for such a modification would be to enhance the electrical conductivity of the electrode, as taught by Hausler. (col. 7 line 1 et seq., col. 8 line 23 et seq.)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER